Space Weather Forecast

Issued on Thursday, 24 February 2022 at 13:10 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant activity

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been very low with no notable flare activity. There are two sunspot regions on the visible disc, both of which are mature and simple, with one unipolar region and another bipolar region. The latter has produced a small background flare, but otherwise both are stable. No Earth-directed CMEs were observed in the available imagery during the past 24 hours.

Solar Wind / Geomagnetic Activity: The solar wind has varied between slightly elevated and elevated levels in the last 24 hours. This is due to waning influence of the faster winds from a coronal hole. Total magnetic field strength has been weak, with the important north-south component also varying weakly. Resultant geomagnetic activity was Quiet (Kp 0-2).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is currently at background levels with no solar radiation storms expected.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is forecast to be low or very low, with a very slight chance of moderate-class flares.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Further coronal hole fast wind arrivals through the period will bring slightly elevated to elevated solar winds throughout. Geomagnetic activity is expected to be generally Quiet with isolated Unsettled spells, but with a chance of Active and a very slight chance G1/Minor Storms, mainly day 3 and day 4 (26th and 27th).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to remain at background, with no solar radiation storms expected through the period.

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Met Office

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	5	10	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	5	5	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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